1031946-001 (redacted)

-001 The Haw River flood of April 25-28, 2017 seemed like any other. We live on the uplands above meadows and wetlands that comprise part of the 100 year flood plain of the Haw River. The Haw River floods the meadows once a year on average. The river, when in flood, carries silt, nutrients and lots of water into the flood plain; the floods bring life. But this past year was very different.

Typically, the flood recedes into the river banks leaving full swales and vernal pools. Within 24 hours, the amphibians congregate in the pools to breed at twilight, the frog song at night is very loud and heard throughout the area. The frogs persist at the pools to breed, singing at night during the time the pools are full, and sometimes during the day as rain approaches. Tadpoles, salamanders, frogs, toads, dragonflies, etc. are abundant locally in the flood plain and adult animals are numerous upslope into the uplands until the wetlands dry.

This year the frogs stopped singing about 2 days after the flood while the pools were still full. We walked along the pools on May 6 and no frogs scattered as we approached, no tadpoles were visible in the water. The water was a strange golden brown color topped with a thin scum. There was nothing visibly alive in or around the water or in the meadows. The water was still, no water striders, no diving beetles, dragon flies above; no creatures moved in the meadow grass — no grasshoppers, no moths or butterflies, no wasps. No creatures, including earthworms or sow bugs were seen under logs and rocks in the flood plain. Only dead insects were visible beside the water and on the scum of the still water. We collected water samples on May 7.

About two weeks after the flood, the bats and insect-eating birds left our upland area. Paper wasps abandoned their brood. Birds left eggs and hatchlings in nests. No pollinators- bees, wasps, moths, butterflies or flies were visible in the pollinator garden, the vegetable garden or the orchard on our upland property. Our porch light at night had no insects around them at all, whereas before the flood, they were extremely numerous. I have photos of native viburnums in full bloom with not a single animal on the bloom on a sunny warm afternoon. Very shocking. I tried in vain to put out troughs of clean water, but the animals were apparently used to drinking from the wetlands below and were exposed to the contaminated water. Multiple dying, convulsing dragonflies, butterflies and bees were spotted and filmed. A deep sense of fear and unease set in; the creatures that had shared our farm for 16 years had left or were dying and we did not know why. No one we reached out to seemed to know why.

We reached out to our neighbors and to the farmer whose cornfield drained into our wetlands. We learned that the cornfield had just been sprayed with Round-up, been treated with nitrogen and had been planted/drilled with corn seed. Nothing unusual apparently. We wondered initially if the contamination had come from the Haw river. However, we learned from the Haw Riverkeeper that our situation was apparently unique. We learned from our upstream neighbors that their frog populations seemed normal, and that they had moths around their lights at night.

I started reading scientific reports to try to understand if Round-up or nitrogen could cause this type of damage. I found that Round-up had been documented to harm adult and juvenile frogs. I had observed plants dying at the barren pools where the wheat straw was deposited on our property from a flood following the 2015 harvest was present. I found scientific reports that roundup ingredients persist in sprayed material until they fully break down.

We reached out to the Haw River keeper, State water quality, agricultural and wildlife personnel. No one had heard of such a thing. I reached out to scientists who study amphibians and to an insect eating bird specialist – they told me- oh this happens all the time from agricultural run-off. A scientist who studies pesticides and insects suggested that given my insect die-off, that I may have contamination from neonicotinoids.

I talked to the farmer and to his seed dealer and found that the lot of corn seed used in the upstream field was indeed coated with 3 fungicides (trifloxystrobin, metalaxyl, and ipconazole) and a neonicotinoid pesticide (clothianidin). The farmer told me that in addition to the (approx.) 15 acres of corn drill planted upstream to my fields, there was an estimated 25 – 50 lbs of additional corn seed had been stored upstream from our wetlands and that was submerged

during the flood in late April. The fields drain into our wetlands. Overall, the event impacted about ½ mile of flood-plain associated wetlands and the surrounding meadows.

I searched for local analytic help with my water samples. I found that there were no state or local chemistry laboratories to test the water for Round up or clothianidin (I could not afford to add the fungicide screen). I finally found a lab in Mississippi (Mississippi State University) and sent the samples of water and of wheat straw that had been swept into my field previously during the 2015 growing season. The water samples showed contamination from clothianidin, 2,4-D and dicamba. The water did not contain Round-up at detectable concentrations, but the 2015 wheat straw did (see report).

Now, in 2018, our upstream farming neighbor is growing untreated hay. We are starting to get recruitment of insects from the surrounding area. I estimate about 20% of normal populations.

However, this spring, in our neighborhood, about 50 lbs of treated sorghum seed was spilled on the road. My neighbor and I tried to sweep it all up, but I saw multiple birds feeding on the remains for over a week (see attached pic). After what I have learned about the toxicity of these coatings, I am extremely concerned at how common environmental contamination occurs.

I am happy to answer questions or to supply additional information.

Thank you,

XXXXXXXXXXXXXXXX



Report of Analysis

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Report Date:

6/30/2017

Personal privacy information

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Date

QA Division

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Client Sample ID: 2 and 4

PO#

Lab Sample ID:

170608011-001

Test	Sample Classification	Results	<u>Units</u>	Comment
2,4-D	Residue Water	0.551	ppb	
2,4,5-T		Not Detected	ppb	
2,4,5-TP		Not Detected	ppb	
4-Nitrophenol		0.038	ppb	
4-OH Chlorothalonil		Not Detected	ppb	
Acetamiprid		Not Detected	ppb	
Acifluorfen		Not Detected	ppb	
AMPA		Not Detected	ppb	
Bentazone		Not Detected	ppb	
Chlorpyralid		Not Detected	ppb	
Clothianidin		0.106	ppb	
Dalapon		Not Detected	ppb	
Dicamba		0.150	ppb	
Dichlorprop		Not Detected	ppb	
Dinoseb		Not Detected	ppb	
Imidacloprid		Not Detected	ppb	
Pentachlorophenol		Not Detected	ppb	
Picloram		Not Detected	ppb	
Glyphosate		Not Detected	ppb	
Pyrithiobac		Not Detected	ppb	
Quinclorac		Not Detected	ppb	
Surfactant		Not Detected	ppb	
Thiacloprid		Not Detected	ppb	
Thiamethoxam		Not Detected	ppb	
Triclopyr		Not Detected	ppb	

Client Sample ID: Wheat Straw

Lab Sample ID:

170608011-002

PO#

Test	Sample Classification	Results	<u>Units</u>	Comment
AMPA	Residue Plant Tissue	22	ppb	
Glyphosate		41	ppb	

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Reviewer

